
Status & Remarks

The application presently contains the following claims:

<i>Independent Claim #</i>	<i>Dependent Claim #s</i>
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1 (withdrawn)	
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10	2-7, 9
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15 (withdrawn)	
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16	17-20
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The examiner had a telephone conversation with the undersigned attorney on December 20, 2005 in which a specie election involving the specie Doverphos[®] 613 in combination with the specie Doverphos[®] 9EH. The undersigned affirms that election as requested by the examiner.

The examiner has withdrawn claims 1-9 and 15 as being directed to a non-elected invention. However, through compliance with the restriction election and claim dependency and substantive amendment, claims 2-7 and 9 are respectfully requested to remain in the pending patent application.

Drawings

The examiner has indicated that the drawings as originally filed were acceptable.

Specification

The examiner has represented that the disclosure was objected to due to the informality of the omission of the patent number of the issued parent. Through amendment, this informality is corrected, thereby rendering the predicate for this objection, moot.

Claims Version

The examiner represented that the current version of the claims which was evaluated were those as amended in the preliminary amendment filed November 26, 2004. The applicant's attorney verifies that was the current version of the pending claims.

Claim Objections

The examiner has represented that claims 8 and 9 were objected to in light of the fact that portions of formulas (V) and (XIV) were cut off at the right margin. The applicant's attorney regrets this inconvenience to the examiner, and has made the appropriate adjustment of the margins.

Claim Rejections – 35 USC §112

The examiner has rejected claim 20 under this section, second paragraph in light of insufficient antecedent basis for the limitation "said polyvinyl chloride" in line 1. The examiner is correct in his analysis and through amendment of the claim dependency, has corrected the antecedent basis issue.

The examiner has also rejected claims 10-14 and 16-20 under this section, second paragraph as being indefinite for the inclusion of the phrase "essentially." While the applicant's attorney would respectfully disagree with the conclusion drawn by the examiner, in a spirit of cooperation, through claim amendment, this term has been removed from claims 1 and 15 (now presently contained as limitations in claims 10 and 16, written in independent form in conformity with the restriction requirement articulated by the examiner).

Claim Rejections – 35 USC §103

The examiner has requested the applicant's attorney to review the issue of inventors in light of the restriction requirement. After making inquiry to the named inventors, the applicant's attorney represents that the named inventors remain correctly identified after consideration of this issue.

The examiner has indicated that claims 10-14 and 16-20 are rejected under this section, subparagraph (a) as being unpatentable over Nosu et al. (JP-3-157437A, and USPTO obtained translation thereof). Specifically, the examiner has successfully found that the Japanese patent has identified alkylaryl phosphites, such as isodecyldiphenyl phosphite (applicant's Doverphos® 8) and phenyldiisodecyl phosphite (applicant's Doverphos® 7) as well as bisphenol-A tetra C₁₂₋₁₅ alkyl diphosphite (similar to applicant's Doverphos® 613) and concluded that it would have been obvious to one of ordinary skill in the art at the time of the invention to have employed mixtures of phosphate esters given the suggestion that they are effective for the same use and that by following the suggestions of the Japanese patent, the presently claimed subject matter is arrived at. With due respect for the opinion of the examiner, it is submitted that this may be reading far too much into the teachings of the Japanese patent.

The English-language translation of the Japanese patent provided by the Office clearly requires five components: (1) hydrotalcite; (2) zinc compound; (3) magnesium hydroxide; (4) a β -diketone compound or a phosphite compound; and (5) a resin, e.g., vinyl chloride polymer. By contrast, the applicant's invention does

not require hydrotalcite or magnesium hydroxide, but does require at least two different phosphite compounds, each selected from a defined class of phosphites. Therefore, the key is to find the motivation to combine two different phosphites from within the Japanese patent.

As the examiner is familiar with, most inventions arise from a combination of old elements and each element may often be found in the prior art.¹ However, mere identification in the prior art of each element is insufficient to defeat the patentability of the combined subject matter as a whole. The examiner must articulate the basis on which he concludes that it would have been obvious to make the claimed invention and explain the reasons one of ordinary skill in the art would have been motivated to select the references, or teachings contained therein and to combine them to render the invention obvious. This “motivation-suggestion-teaching” requirement protects against the entry of hindsight into the obviousness analysis, a problem which §103 was meant to confront.² Therefore, the “motivation-suggestion-teaching” test asks not merely what the references disclose, but whether a person of ordinary skill in the art, possessed with the understandings and knowledge reflected in the prior art, and motivated by the general problem facing the inventor, would have been led to make the combination recited in the claims.³ Additionally, an obviousness determination requires not only the existence of a motivation to combine elements from different prior art references, but also that a skilled artisan would have perceived a reasonable expectation of success in making the invention via that combination.⁴ However, to have a reasonable expectation of success, one must be motivated to do more than merely to “vary all parameters or try each of numerous possible choices until one possibly arrived at a successful result, where the prior art gave either no indication of which parameters were critical or no direction as to which of many possible choices is likely to be successful.”⁵ Similarly, prior art fails to provide the requisite “reasonable expectation” of success where it teaches merely to pursue a “general approach that seemed to be a promising field of experimentation, where the prior art gave only general guidance as to the particular form of the claimed invention or how to achieve it.”⁶

Applying the mandates of the Court of Appeal, Federal Circuit, it is clear that the Japanese patent merely provided a starting point for experimentation, and that only by trial and error, would perhaps, a serendipitous result be arrived at by the experimentalist as taught by the Dover Chemical invention, and as

¹ *In re Leonard R. Kahn*, 441 F.3d 977, 987, (Fed. Cir. 2006), citing *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998)

² *Kahn* at 986; *Rouffet* at 1357-59

³ *Kahn* at 988, citing *Cross Med. Prods.*, 424 F.3d 1293, 1321-24 (Fed. Cir. 2005)

⁴ *Medichem, S.A. v. Rolabo, S.L.* 437 F.3d 1157, 1165 (Fed. Cir. 2006), citing *In re O'Farrell*, 853 F.2d 894, 903-04 (Fed. Cir. 1988)

⁵ *Medichem* at 1165; *O'Farrell* at 903

claimed in the pending application. There is absolutely no teaching within the translated Japanese patent to combine any phosphate as claimed in the present application, and to imply that there is would be to employ impermissible hindsight. In fact, it is respectfully submitted that an inventor of ordinary skill in the art, upon seeing the depiction of one formula of phosphite, would more logically conclude that all of the enumerated categories were equivalent, thereby teaching away from the Dover Chemical invention, which teaches that they are different. It is hard to fathom what suggestion an experimentalist would be following to arrive at the claimed subject matter as stated by the examiner. There is none stated in the translation of the Japanese patent, thereby leading to the very result which the Court of Appeals, Federal Circuit cautioned against in *Medichem*, namely to "vary all parameters or try each of numerous possible choices until one possibly arrived at a successful result, where the prior art gave either no indication of which parameters were critical or no direction as to which of many possible choices is likely to be successful." At best, the Japanese patent teaches merely to pursue a "general approach that seemed to be a promising field of experimentation, where the prior art gave only general guidance as to the particular form of the claimed invention or how to achieve it."

The examiner, perhaps anticipating the deficiencies of the predicate of the above rejection, has additionally rejected claims 10-14 and 16-20 under this section, subparagraph (a) as being unpatentable over Valdiserri (US 4,614,756) alone or in view of York (US 4,116,926). However, for similar reasons to those advanced above, this rejection also fails to render obvious the pending claims in the application.

The examiner admits that Valdiserri teaches an invention which requires an organotin mercaptide compound. It is admitted that Valdiserri does have the goal of reducing the requirement for the very expensive organo tin mercaptides, and thus, would be a useful advance in the PVC compounding art. (see col. 1, lines 43-46). However, Valdiserri never achieves the goal of the applicant, namely the elimination of tin from the stabilizer package. By claim amendment, the option of still using some tin through the combination of the previous language, namely "essentially free of ... tin" coupled with the "comprising" language, is no longer an issue. The claims now expressly exclude tin ... as well as calcium, cadmium and barium. The missing teaching, namely how to eliminate tin is not found by coupling the teaching of Valdiserri with that of York. In fact, if anything, actually teaches away from the invention. York teaches an improved stabilizer which requires a small proportion of triisopropanolamine. If an experimentalist would have been motivated to do anything, he would have added triisopropanolamine as a partial replacement to the reduced levels of organo tin mercaptide taught by Valdiserri.

The examiner has commented that the applicant's examples were considered, but in his opinion, they failed to provide sufficient data to conclude that a greater than additive effect is in evidence. With due respect for the conclusion drawn by the examiner, the applicant's attorney would respectfully request the examiner to

⁶ *Medichem* at 1165; *O'Farrell* at 903

reconsider this position. There is little doubt that there are other effective stabilizer packages present in the marketplace, some of which contain heavy organometallics, while others contain barium, while still others contain cadmium. At least one surprising aspect of the Dover Chemical invention is the fact that as shown in Fig. 5, which illustrates the exact species considered by the examiner, the combination diphosphite performed at least as well, and often times better than other commercially available stabilizer packages which contained heavy metals. This was shown again in Fig. 6. And perhaps most vividly, Fig. 7 illustrates one of the more important aspects of the invention, which is the minimization of volatiles elimination from the plastic. As shown in the pending application, and present in the claims, the Dover Chemical invention matches performance of prior art mixed metal stabilizers, but is essentially toxic metal-free by utilization of phosphite ester compositions with catalytic amounts of zinc.

By changing the transitional language of the additive package to "consisting of" coupled with the elimination of calcium, cadmium, barium and tin from the additive package, it is respectfully submitted that the above claims distinguish in a nonobvious manner over the prior art of record.

Comment on US 5,880,190

The examiner had requested the applicants to comment on the pertinence of the above identified patent. The applicant's attorney provided that patent reference to the examiner in an abundance of caution as it related to one approach pertinent to the reduction of volatile organic compounds by a coating technique, which may have some applicability to the patentability of pending claims 5-6 regarding weight loss of the composition.

Citation of Pertinent Prior Art

The examiner has indicated that prior art made of record and not relied upon but yet considered pertinent to the applicant's disclosure was a Canadian patent issued to Leistner et al., namely Canadian patent no. 740042. The applicant's attorney has reviewed the same and offers no additional comment to that provided by the examiner

Request for Consideration

Applicant believes that all independent claims clearly define over the prior art and that the distinctions between the present invention and the prior art would not have been obvious to one of ordinary skill in the art. Additionally, the remaining dependent claims, by the limitations contained in the base independent claims, are felt to be patentable over the prior art by virtue of their dependency from independent claims which distinguish

over the prior art of record. All pending claims are thought to be allowable and reconsideration by the Examiner is respectfully requested.

It is respectfully submitted that no new additional searching will be required by the examiner. A fee determination sheet is attached for this amendment response. The Commissioner is hereby authorized to charge any additional fee required to effect the filing of this document to Account No. 50-0983.

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*Respectfully Submitted,
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